

on the varieties and species in the decapod crustaceans in which he refers to "varietal characters" and "variations within a homogeneous species or variety". After this he published a series of memoirs ending in a reform of their classification. He regarded the crabs as a true group with a common phylogenetic origin through the Dromiacea. The attempt to show that the main divisions of the Brachyura were ecological as well as morphological groups, based on adaptations to swimming, sand-burrowing, sponge-carrying, 'masking' and so forth was very interesting and illuminating. This was followed by a further consideration of land forms and the relationships of certain prawns, particularly the Pontoniinae from the *Sealark* Expedition. He summarized some of his views in two important papers in the *Annals and Magazine of Natural History*. In 1922 he was awarded the degree of Sc.D.

In 1908 Borradaile was appointed University demonstrator in animal morphology and in 1910 lecturer, retiring in 1937. It was his own choice to specialize in the advanced teaching on invertebrates: he divided his groups into full courses extending through four terms in two years, choosing Crustacea and general questions relating to them, starfish, protochordates, protozoans and odd forms. He was always clear, concise, and there was little original work which was not included. He was at his best in his practical classes, into which he developed in himself and his pupils an enthusiasm often started by some question.

Borradaile had been taking his share of extra-mural lecturing for twenty years, when he published "The Animal and its Environment", 1923, a subject which he chose for lecture courses especially in East Anglia and to the Forces during the War of 1914-18: it

gave to many a delightful hobby wherever they might reside, but the book was spoilt to science students by the publishers' view that the best form of illustration was by the reproduction of text-book and other well-known figures.

Dr. Borradaile was in succession lecturer, dean and then tutor of Selwyn College, and he helped both in his College and in the University during the war period, 1939 onward. He was offered scientific preferment, but his College held the first place in his affections. He was a most conscientious tutor, following the careers of his students, domestic and otherwise, often helping financially those in need. He was a wise counsellor, though his shyness prevented close friendships. He was very proud of being a freeman of the City of London and on the Livery of the Drapers' Company. He liked travel and he had a deep appreciation of pictorial art. In term-time in his later years his hobby was gardening—his dahlias 15 ft. high, fed from a compost heap, were known to all passers-by. In him Cambridge loses a notable figure ever helpful in all its activities.

J. STANLEY GARDINER.

WE regret to announce the following deaths:

Dr. Frank M. Chapman, emeritus curator of ornithology in the American Museum of Natural History, aged eighty-one.

Dr. J. F. Tocher, formerly lecturer in statistics in the University of Aberdeen, and consulting chemist to the Highland and Agricultural Society of Scotland since 1912, on November 8, aged eighty-one.

Lady Woolley, who took part with her husband Sir Leonard Woolley in archaeological work at Ur of the Chaldees and elsewhere, on November 8.

NEWS and VIEWS

Science and Ethics

WHILE not agreeing with all the statements made by Prof. J. A. Ryle in his plea for a more ethical approach to matters scientific (beginning on p. 619), we feel that a suggestion that men of science should get together and devise some form of charter to guide their future activities is timely. Charters for men of science have been put forward for their consideration on previous occasions; but there is one condition which seems to us to be imperative. That is, the charter must receive the support of, and be honoured by, men of science in all countries; this does not seem likely of achievement if we have with us men of science who are working under any kind of political regime where they are subject to political control and even orders. Absolute scientific freedom in every country is essential if any form of charter is to have the desired effect. Readers of *Nature* will recall a suggested "Ethical Declaration for the Times" for men of science by Mr. L. L. Whyte published during the disturbed times of 1938 (*Nature*, 141, 827; 1938). That declaration read as follows:

DECLARATION

I am the inheritor of the tradition of civilization which has proved more lasting than empires. Whenever I use the language or the products of science I unconsciously pay homage to the countless men for whom no sacrifice was too great in the struggle to develop the human mind and establish the truth. Toleration and freedom are the heart

of this tradition; for individual thought and love of truth are the basis not only of science, but also of justice and of civilization.

I declare my loyalty to this tradition, my belief in the freedom of the individual to develop his talents for the enrichment of the community, and my conviction that man's community is now the whole human race, within which each nation must play its characteristic part. The natural balance between personal freedom and the proper demands of society, which is the life and health of civilization, is to-day doubly threatened; in certain societies by the denial of freedom and in the democratic countries by the irresponsibility of individuals. In the face of this threat:

I pledge myself to use every opportunity for action to uphold the great tradition of civilization, to protect all those who may suffer for its sake, and to pass it on to the coming generations. I recognize no loyalty greater than that to the task of preserving truth, toleration, and justice in the coming world order.

College of Aeronautics: Appointment of Mr. E. F. Relf, C.B.E., F.R.S.

THE recent announcement that Mr. E. F. Relf, superintendent of the Aerodynamics Division of the National Physical Laboratory, has been appointed principal of the newly founded College of Aeronautics, will interest all those who are concerned with the well-being of British aeronautics. The purpose of the College, as defined in a recent report published by H.M. Stationery Office, is to provide a high-grade engineering, technical and scientific training

in aeronautics for selected students to fit them for leadership in industry and civil aviation, in the Services and in education and research. The College has a governing body of its own, representative of all the interests concerned. Nevertheless, the principal and his staff must bear the responsibility for setting the standards and establishing tradition, especially in the early days. Mr. Relf served an apprenticeship for five years in Portsmouth Royal Dockyard. In 1909 he was awarded an open Royal Exhibition tenable at the Royal College of Science, where he won the Tyndall Prize for physics in 1910 and obtained the diploma of the College in 1912. He was appointed to the staff of the National Physical Laboratory in 1912, and thirteen years later was made superintendent of the Aerodynamics Department.

During his early years at the National Physical Laboratory, Mr. Relf was engaged on aerodynamic researches and, under Stanton, Bairstow and Southwell, made a noteworthy contribution to the establishment of the international reputation of the Department. One of his outstanding achievements at that time was the design of the balances and controls for the compressed-air wind tunnel, a very powerful research equipment which enables air-flow problems to be studied over a very wide range of Reynolds numbers. Owing to the high pressure in the tunnel (up to twenty-five atmospheres) direct operation of the balances is not possible: they must either be automatic or operated from outside the tunnel. After a great deal of thought, Mr. Relf decided to base the design on the principle of the Kelvin current balance and in such a manner that an observer could measure, at any moment, the forces acting on the model in the tunnel. The successful operation of the balances under the stringent conditions existing in the tunnel is a testimony to his skill and foresight. After his promotion to superintendent, administrative duties and committee work made an ever-increasing demand on his time, but he could always find time to give guidance and sound advice to members of his staff. Mr. Relf is a member of the Aeronautical Research Council and of several committees of the Ministry of Aircraft Production. He has always been keenly alive to the value of a close contact between research and industry, and he has taken every opportunity to get first-hand information on the problems of aircraft firms. The best wishes of his many friends will be with him in the tasks that await him at the College of Aeronautics.

Chair of Pharmacology, College of the Pharmaceutical Society

DR. G. A. H. BUTTLE has been appointed to the chair of pharmacology at the College of the Pharmaceutical Society, in succession to Prof. J. H. Gaddum, who now holds the chair of pharmacology at the University of Edinburgh. Prof. Buttles returns from a long and varied experience in the Army, in which he held the rank of lieutenant-colonel, R.A.M.C. He served for six years as officer commanding Base Transfusion Unit and adviser in resuscitation with the Middle East Forces and later with the 21st Army Group. Previous to the War, in conjunction with Henry, Trevan and Stephenson, he published work on chemotherapeutics from the laboratories of the Wellcome Foundation, including much work on the antibacterial action of sulphanilamide and allied substances in streptococcal infections. In conjunction with Colebrook and O'Meara he demonstrated the inhibitory effects that

sulphanilamide compounds had on bacteria outside the body. During the War, in conjunction with Lieut.-Colonel G. Mitchell, he published investigations on the treatment of infected war wounds with powder of sulphanilamide and derivatives of acridine, and several articles on blood transfusion for service purposes. As director of the Pharmacological Laboratories in the College of the Pharmaceutical Society, he will be able to continue the work of Burn and Gaddum on biological assays, and will undoubtedly be a great asset to the team of research workers already engaged on the chemical aspects of chemotherapy.

Agricultural Economics Research Institute, Oxford: Appointment of Prof. A. W. Ashby

PROF. A. W. ASHBY, professor of agricultural economics at the University College of Wales, Aberystwyth, who has recently been appointed director of the Agricultural Economics Research Institute, Oxford, in succession to Dr. C. S. Orwin, was a scholar of Ruskin College, Oxford, and later was the first holder of a research scholarship at the Institute to which he is shortly to become the head. After a period of study at the University of Wisconsin, he was attached to the Food Production Department of the Ministry of Agriculture during the First World War, returning afterwards to the Institute as senior assistant. Appointed to Aberystwyth in 1924, he created the Department of Agricultural Economics there, and began a study of the economic problems of farming in Wales out of which has developed an advisory service, particularly in connexion with the co-operative movement, which has proved of first-rate importance to Welsh farmers.

The chair of agricultural economics at Aberystwyth, to which Prof. Ashby was elected in 1929, was the first in the subject to be created in Great Britain, and his educational work has attracted students from many parts of the world. As a member of several royal commissions and departmental committees, the National Council of Agriculture and the Agricultural Wages Board, his experience and knowledge have been freely drawn upon by the Ministry of Agriculture and by agricultural organizations in England and Wales. Prof. Ashby is entering upon his new duties at a very critical time in the history of agriculture, when the artificial prosperity induced by war conditions will shortly pass, and the industry will have to establish itself upon a peace-time footing. In such conditions, few better fitted than he could be found to direct research into the problems which confront those whose interests and livelihood are in the land, and to play a part in framing the education which university students, both undergraduate and postgraduate, will need.

Adam Hilger Ltd. : Research and Development

GROUP CAPTAIN A. C. MENZIES has been appointed controller of research and development to the firm of Adam Hilger, Ltd., and commenced his duties on November 14, succeeding Mr. F. Twyman in this capacity. Mr. Twyman continues with the firm as managing director and technical adviser. Dr. Menzies saw active service in the War of 1914-18 as a seaplane pilot in the Royal Naval Air Service, and after graduating from Cambridge had appointments in physics at the University of Leeds, University College, Leicester, and University College, Southampton. At Leicester he inaugurated the Physics Department in the newly formed College, and at Southamp-